



## Project: CSM\*-Hotel

A new manufacturing concept for  
small and medium sized enterprises

(\* Competitive Sustainable Manufacturing)

## Background: Competitive Sustainable Manufacturing (CSM) (1/2)

- The well-known definition of sustainability is: *“The Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”* (WCED 1987).
- This political statement is the root cause for today’s key global challenges and related problems that call for a drastic change of paradigm from economic to sustainable development.
- Competitive Sustainable Manufacturing (CSM) is seen as a fundamental enabler of such change (Jovane 2009).
- Sustainable development has been recently increasingly emphasized around the world (Tuokko 2010);
  - in Europe (EFFRA, Factories of Future Strategic Roadmap and the Manufuture initiative),
  - the USA (Lean and Mean),
  - and Japan (Monozukuri and New JIT)

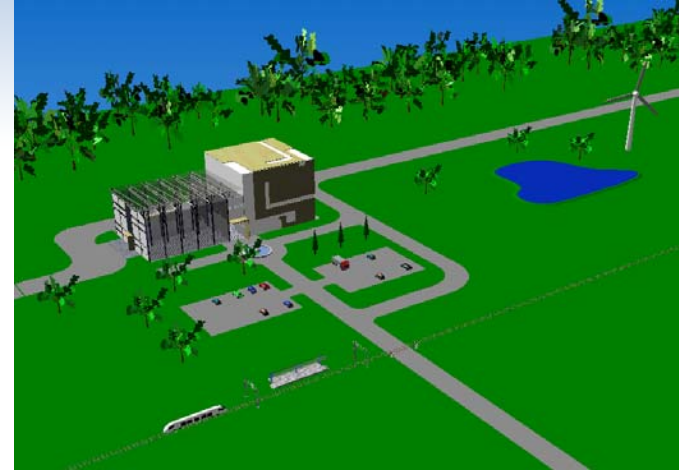
## Background: Competitive Sustainable Manufacturing (CSM) (2/2)

- The CSM paradigm widens the classical view of sustainability (economical, social, and environmental) to interact with the STEEP context (FoF PPP Ad-hoc Industrial Advisory Group 2010).
  - Social,
  - Technological,
  - Economical,
  - Environmental,
  - and Political
- Sustainable manufacturing is a multi-level approach (Jawahir 2009, Sutherland 2008) where;
  - product development,
  - manufacturing systems and processes
  - enterprise and supply chain levels need to be considered,
  - *with metrics identified for each level.*

# CSM-Hotel; a new manufacturing concept for SME's

The CSM-Hotel is a production concept of competitive and sustainable manufacturing for SME's operating in the new industrial environment

The concept offers partially shared hardware and software resources and solutions for collaboration enabling the companies to focus on their core competence.

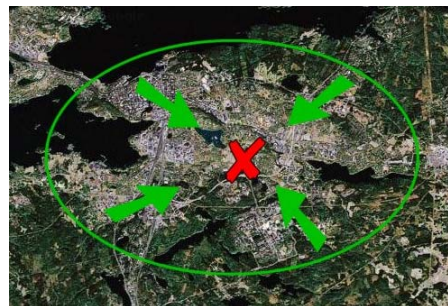


CSM-Hotel can exist for example:

- ❖ Close to a client integrated into its system



- ❖ Within district centers to collect SMEs



- ❖ As a globally distributed network



# CSM-Hotel - Main Features

## Sustainability

- Optimizing the use of investments (e.g. facilities, equipments, know-how)
  - Cost effective
  - Saves resources and energy
- Provides for both hotel companies and main contractors a scope of continuity and competitiveness

## Competitiveness

- Co-operation and sharing of experiences and facilities
- Agreeing in advance what is enough (open books)

## Optimized public-private model

- Public = joint forces and co-operation
- Private = privately owned production entities

## Flexibility

- Flexible resource allocation (Both shared and company specific)

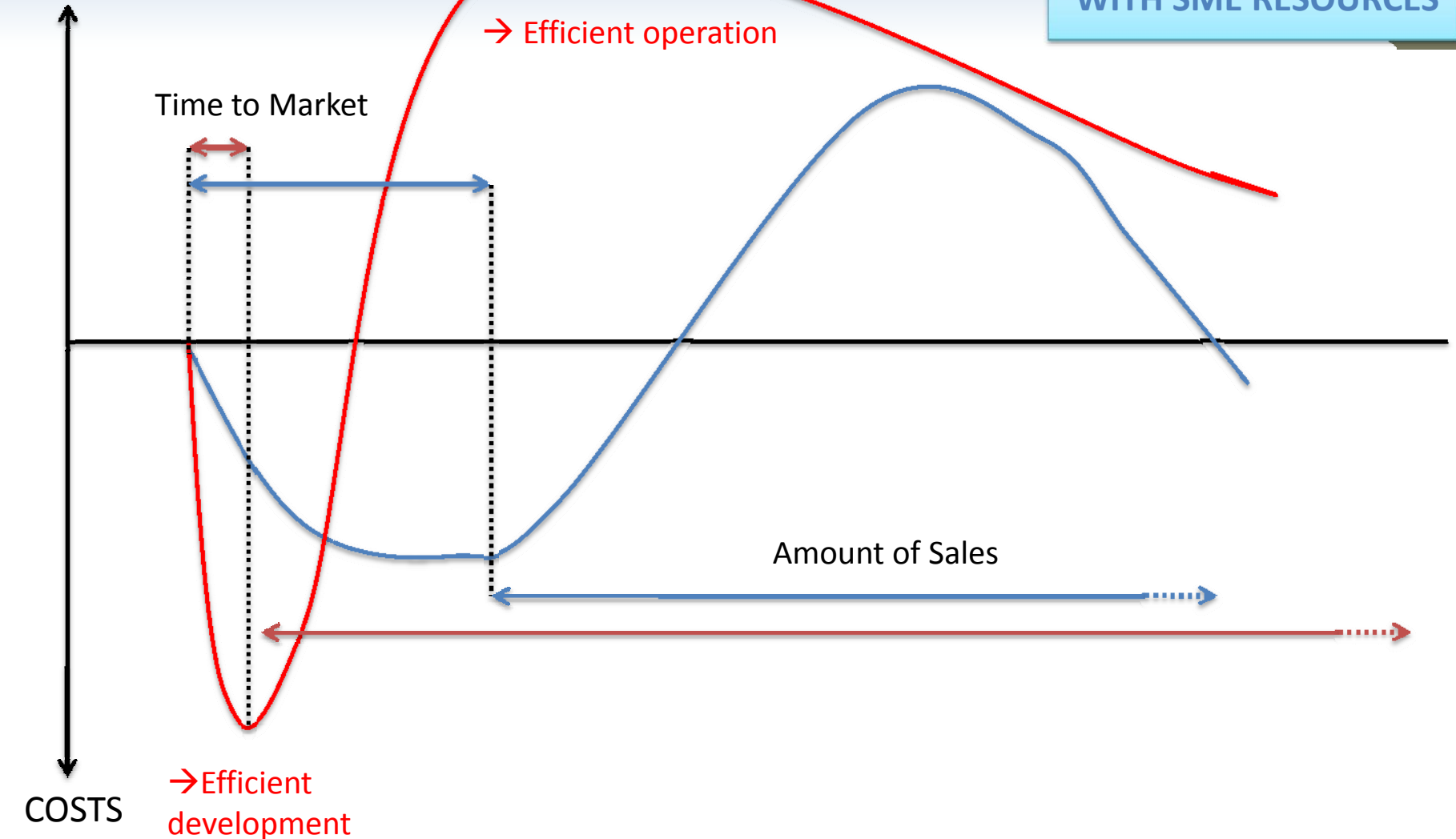
# CSM-Hotel

- Co-operation
- Digital manufacturing



Products earlier into markets

PROFIT



# Basic principles of CMS-Hotel (1/2)

## 1. “Working under the same roof”

- ❖ Use of common heating/cooling, power, maintenance

## 2. Common facilities and services

- ❖ Administration
- ❖ Finance
- ❖ Human resources
- ❖ Recruiting
- ❖ Procurement
- ❖ Sales
- ❖ Logistics
- ❖ Maintenance
- ❖ IT-support
- ❖ etc.

CSM-hotel operator or service provider is responsible of organizing the services and maintenance of the hotel!  
(Compare to shopping mall!)

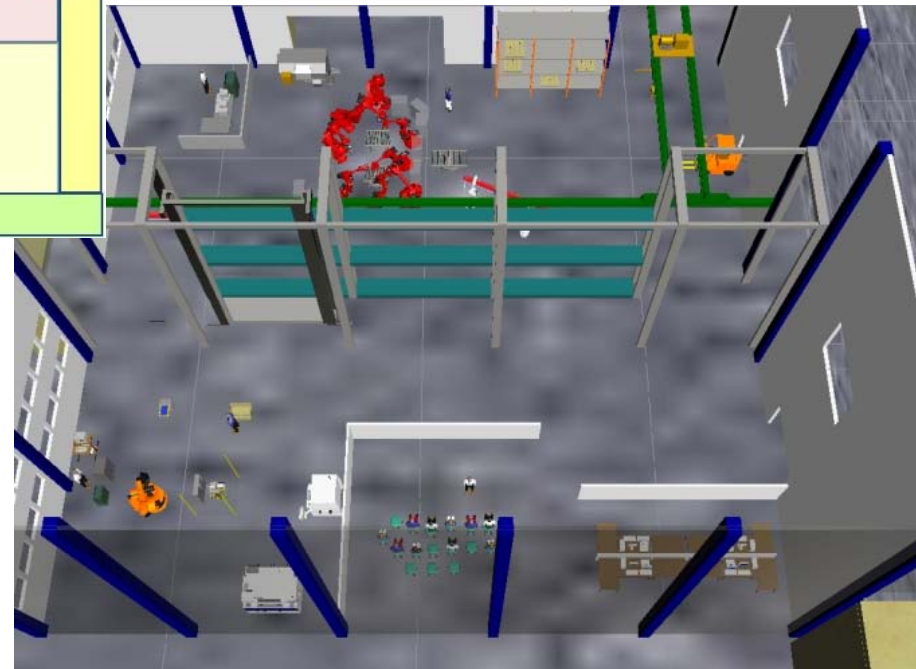
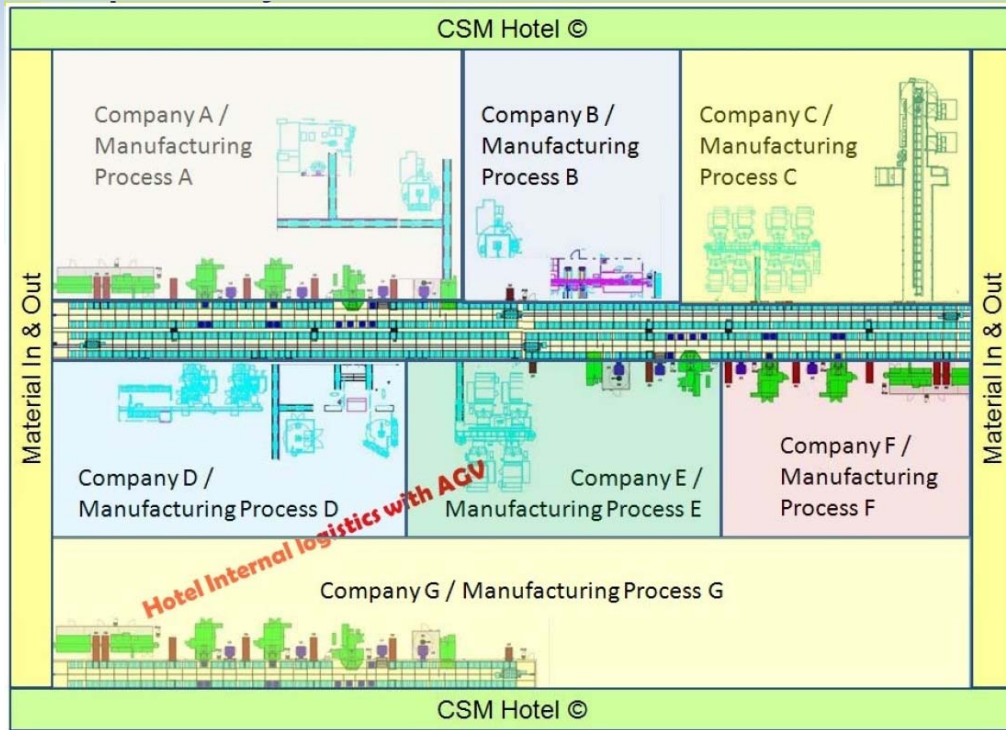


## Basic principles of CMS-Hotel (2/2)

3. Working in common production planning environment
  - ❖ Use of common production planning tools
  - ❖ Monitoring non-manned hours and capacity utilization
4. Sharing know-how, experiences and best practices
  - ❖ Learning from others to be better in getting things done
5. Open books
  - ❖ Same criteria and common overall control
  - ❖ Agreeing what is enough and how transparent companies should be
6. Setting up a common strategy, however working as a private company

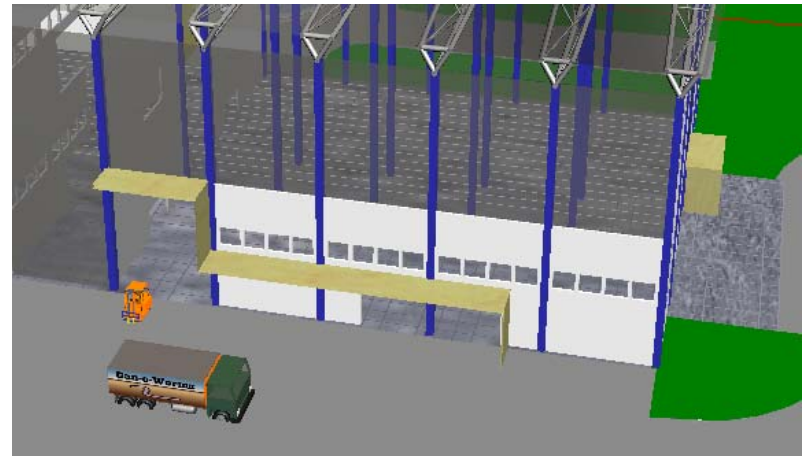
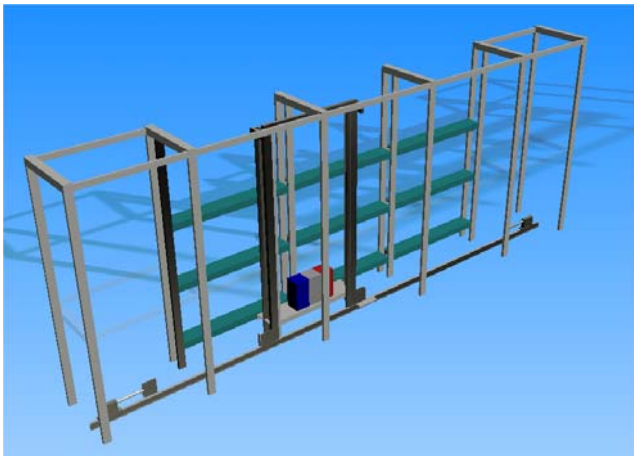


# CSM-Hotel – Example layout

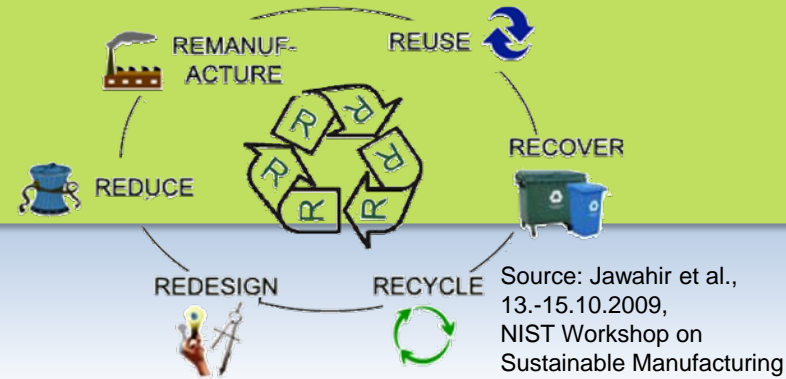


# CSM-Hotel; Advanced material handling

- ❖ E.g. centralized, shared and automated storage and logistic solution
- ❖ Efficiency factors:
  - Affordable just on time delivery
  - Quick scaling, reduced WIP and risk
  - Fast and easy change-over
  - Controlled materials flow and storage management
  - Improved safety and work environment
  - Better use of floor space
  - Integrated supply chain and reverse logistics



# Sustainability: Integrated 6R



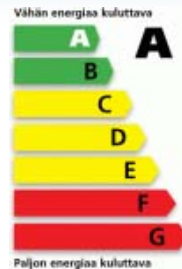
## ❖ Reduction of Emissions (VOC, CO2..)

- Technology, planning and politics
- ReDesign and ReDuce



## ❖ Energy efficiency

- Technology, planning, politics
- ReDesign, ReDuce ,ReCycle



## ❖ Use of latest technology

## ❖ Use of Renewable and Recycled Resources

- Energy, Water, Air, Material Equipment Human

## ❖ Intelligent use of resources

- Energy, Water, Air, Space, Material, Equipment.Human.

## ❖ Life Cycle Business

- ReCycle ,ReUse, ReCover partners
- Life-Cycle business within CSM-Hotel

## ❖ Social efficiency

- Health, Safety, Competence building, empowerment...



Source: WIKIPEDIA;  
Photovoltaikanlage auf dem  
Lehrertrakt des Goethe-  
Gymnasiums Bensheim,  
Klaus Holl, 18.11. 2005



Source: WIKIPEDIA; Wind  
turbines, Tomasz Sienicki,  
31.5.2004



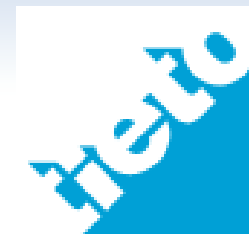
## Summary of the CSM-hotel benefits (1/2)

- ❖ CSM-Hotel is a technology leap for a SME's!
- ❖ Concept allows SME's to focus on their core competences!
- ❖ Enables things that SME's don't necessarily have resources for
- ❖ Concept will improve hotel operator's and companies'
  - Agility
  - Competitiveness
  - Cost-effectiveness
- ❖ Improved traceability of quality
- ❖ Improved transparency of operations
  - e.g. open books, partner's cost structure
- ❖ Improved data management of product and production

## Summary of the CSM-hotel benefits (2/2)

- ❖ Shared resources will lead to cost savings (e.g. logistics, software)
- ❖ CSM-Hotel is a bigger player in the market (e.g. savings in raw material purchases)
- ❖ Digital Manufacturing
  - Reduced costs of planning and change
  - Reduced ramp-up of change
- ❖ Utilization of the latest environmental technologies and eco-efficient manufacturing
  - To meet emerging and ever-tightening requirements
  - Environmental stress is reduced significantly
- ❖ Improved opportunities for social interaction

# CSM-Hotel - Partners



TAMPERE UNIVERSITY OF TECHNOLOGY

# Thank you for your attention!

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CSM-Hotel -project:

<http://wiki.tut.fi/CSMHotelli>

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